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NASE

Windows post-processing application for

SNORS (Nasal Oral Ratiometry System)

USER MANUAL

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Chapter 1

Introduction

NASE is an additional program to complete the SNORS package. It has no data acquisition features but many capabilities for analysing the data recorded with the DOS program SNORS. This program runs under Microsoft Windows 3.1. Hence it has a graphical user interface with higher screen resolutions which helps processing the data. Since Windows is a wide spread platform its functionality is well known. Everybody who has used Windows before should not have any problems using NASE. Most of the operations must be performed using the mouse or another pointing device, such as a trackball.

The software enables the user to load previously saved files, to show their contents graphically and to perform calculations and cursor measurement operations. Furthermore, you can save the results of these operations in a report, separate from the data file. You can process these reports with any text editor or spread sheet editor. Refer to the documentation of the appropriate program for details of how to load/import text files.

Chapter 2

Installation

2.1 Requirements

As mentioned above, NASE is a Windows program and needs a PC with Microsoft Windows 3.1 installed. It also works with any operating system which is able to run a Windows program, like Windows 95. It requires a pointing device, e.g. a mouse. You can not work without any pointing device! NASE needs about 300k of disc space, which should not be a problem.

2.2 How to install

Start windows first. Choose FILE/RUN...[1] (ALT+F/R)[2] in the program manager. Ensure the disc is in drive a:. Type in the edit field 'a:\install' and press ENTER. Now the installation program starts and informs you of the drive and path to which the application will be installed. All the necessary files are then copied into the selected directory, which is created if it does not exist. After the install program has finished, you can add an icon to a group in the program manager. Choose the group you wanted to add this program to first. Then select FILE/NEW (ALT+F/N) and click [OK]. You are asked for several parameters now. The easiest way is to choose [BROWSE] (ALT+B). A dialog pops up that looks like a file open dialog. Change to the drive and path you installed the program to and choose 'nase.exe' in the list box under 'FileName:'. Then click [OK] or hit ENTER twice. The icon of NASE should appear at the end of your chosen group. If you have problems refer to the online help of the program manager (F1).

[1] This means you should select the menu 'File' and then the menu item 'Run...'. Refer to the windows documentation if you need help.

[2] If you prefer to use the keyboard you can select the menu item by using these keystrokes. 'ALT+F' means press the Alt-key, hold it down and press the F-key.

Chapter 3

The NASE Application

3.1 The Main Window

When you have started the application you see an empty window with a menu bar. This is the main window of the NASE application. At the bottom you see a status line which provides quick help on the menus when selected. The size and position of the main window will be saved when you quit the application. To arrange the patient windows within the main window you can use the commands in the WINDOW menu.

Related topics:

- Start the Application, see 4.1
- Patient Window, see 3.2
- Arrange Patient Windows, see 4.13

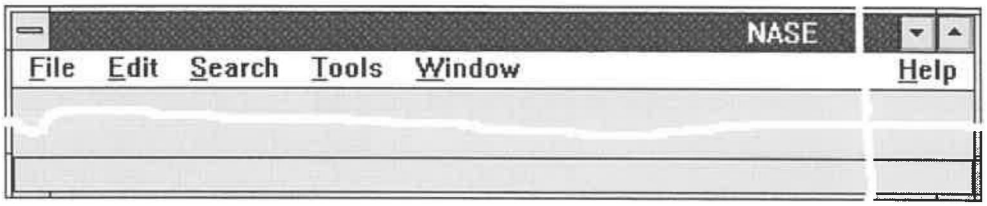

Figure 3.1: NASE Main Window

3.2 The Patient Window

This consists of three different parts, the info line at the top, the graphical display window in the middle and the control area at the bottom of the patient window.

Info Line: Here you can see information about the patient which was typed in during the creation of the data file with SNORS. The information contains from left to right: patient name, comment and date.

Graphical Display Window: The window itself consists of two parts the graphs and at the bottom the word list.

At first you can see three waveforms, one for each of the channels Voice, Nasal and Oral, and all the words of the word list. You see the whole data at once. To perform any operation on the data, you first have to choose a word you want to work with. Then you can further zoom into interesting parts of the data and perform calculations and cursor measurements.

The labels on the y-axis are relative to the maximum value of each channel, i.e. in percent. The labels on the time axis are in seconds.

Control Area: This consists of the three boxes called Commands9 Display and Visible. With these you can control operations, like cursor measurement and zooming, and the appearance of the graphical display.

Commands Box: This consists of two buttons. The left button controls what you can do with the mouse. It changes its title each time you click it. At first it reads [Cropping] which means you can perform the cropping operation. If you click it once it changes to [Limits] and now you can set the limits for the calculation. Clicked once more it changes to [Measure] and you can do the cursor measurement.

The right button [UnDo] is only of interest when you are showing one word. With it you can undo the last cropping operations up to ten times.

Display Box: You can control the appearance of the display window with the two radio buttons called 'All in one' and 'Separate'. At first the 'Separate' button is selected and you see one display for each data channel. When you select 'All in one' the display shows all curves in one diagram.

Visible Box: There are three check boxes, one for each channel. With them you can show or hide the appropriate channel. At first all boxes are checked.

Related topics:

- Changing patient information, see 4.9
- Selecting Words, see 4.4
- Zooming/Cropping, see 4.5
- Cursor Measurement, see 4.6
- Limits for Calculation, see 4.7
- Calculation, see 4.8

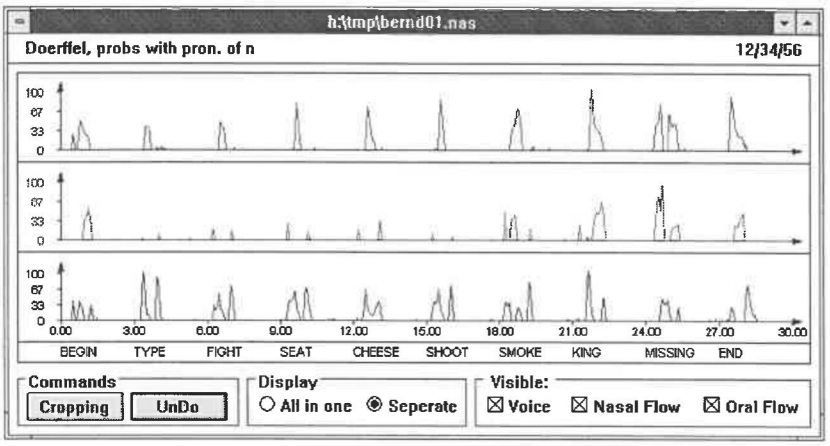

Figure 3.2: Patient Window

3.3 Report

The report consists of all cursor measurements and results of the calculations which are saved to it. All entries are held in memory until the report is saved. The file name of the report is by default 'name.rep', where name is the file name of the data file without an extension.

You can view the report with a text editor by selecting the menu TOOLS/REPORT (ALT+T/R). The report will automatically be saved under its current file name and displayed in a new window. If you change the report in one of the windows the other one is NOT updated. When you change the report in the editor window save it and then load the report again in NASE with the menu FILE/OPEN REPORT (ALT+F/R) to get the changes into the memory. When you want to add new entries to the report (results of calculations or cursor measurement) then close the editor window if one is opened and open a new one after you finish the additions.

Related topics:

- Commands for Reports, see 4.11.

Chapter 4

Operations – Step by Step

4.1 Launching the application

After you have installed the program on your computer and set up an icon in any program manager group you can just double-click on that icon to start NASE.

4.2 Getting Help

This file is also available as online help. Some of the dialog boxes have a [HELP] button. If you choose this you get to the help about the current dialog. Another way is selecting HELP/CONTENTS (ALT+H/C) to get to the contents page of the help. If you do not know how to use the Windows help system refer to the Windows documentation.

A quick help on the menus is given in the status window (3.1).

4.3 Loading a data file

Select FILE/OPEN (ALT+F/O) to see the File Open dialog box. You can enter a filename in the edit field at the top of the box. At first you see there the default value '*.nas'. In the list box on the left you see all the files which fit to the mask in the filename field out of the current directory. Double clicking on a file in the file list box will load this one and display the patient window. Alternatively you can hit ENTER or click [OK] if there is a valid file name in the file name edit field. The current directory is shown direct under the filename. In the list box on the right you see all available disc drives and subdirectories. Here you can change the current directory. You can go to the directory one level above the current one by selecting the double dot '..'.

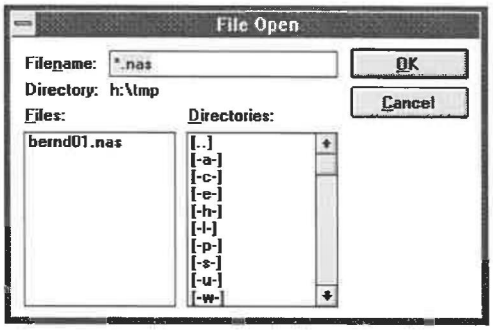

Figure 4.1: File Open Dialog Box

4.4 Selecting Words

If you want to perform any operation on the data you have to select a single word. You can do so by positioning the cursor on the text of a word in the word list and clicking with the left mouse button. Now the display shows only the data for this word and you can perform any operation you like.

To get a closer overview on the data you can also select words which are next to each other. You can not perform any operations in this state – you have to select a single word.

To get back to the whole list of words just click with the right mouse button on the word list.

4.5 Zooming/Cropping

You have to choose a single word to perform the cropping. The left button in the Commands Box should read [Cropping]. If it does not, change it by clicking on it. When you move the cursor into the display you see it as a cross and a line parallel to the y-axis. By clicking the left mouse button you change the left edge of the visible area to the cursor position and similarly change the right edge. Feel free to play with it – you can undo the cropping up to ten times with the 'UnDo' button in the Commands Box.

4.6 Cursor Measurement

You have to choose a single word to perform the cursor measurement. At the top right part of each display you see the relative values and the slope at the cursor position in the same colour as the curve. Additionally, you see the Nasalance at the cursor position in the display with labels on the time axis in black (If there is more than one display it is the one directly above the word list.). To change the display of these values see 4.10.

If you want to save some measurements in a report file, the left button in the Commands Box should read [Measurement]. If it does not, change it by clicking on it. Now you simply click with the left mouse button at the appropriate positions in one of the displays to add these values to the report.

Related topics:

- Report, see 3.3

4.7 Limits for Calculation

If you want to do some calculation in a specific area you can set limits to do so. The left button in the Commands Box should read [Limits]. If it does not, change it by clicking on it. Now you can set two markers in the displays by clicking with the left and the right mouse button. You can change these limits as many times as you like simply by clicking with the appropriate mouse button again.

4.8 Calculation

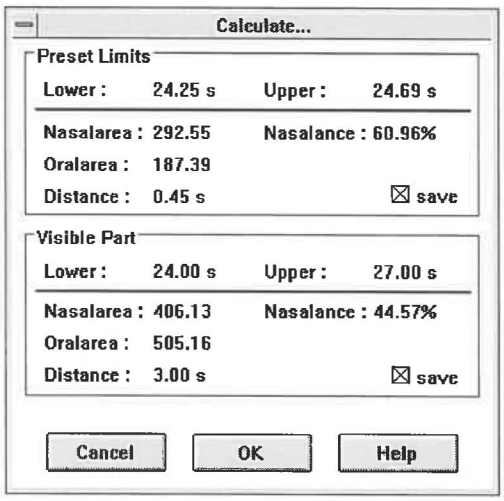

Figure 4.2: Calculation Dialog Box

The available calculations are the area under the Nasal and Oral curves, the Nasalance and the distance between the limits. The calculation is performed within the visible area and the preset limits. To do the calculation select the menu TOOLS/CALCULATE (ALT+T/C). The Calculate Dialog Box will appear. Here you see the results of all the calculations. If you want to save these values into the report, select the tick box labelled 'save' in the sections 'Preset Limits' and/or 'Visible Part'. If you choose [OK] the dialog box is closed and the results are saved. Choosing [Cancel] or ESC is a secure way NOT to save any result by mistake. If you want to save the results but forgot to do so, simply do the calculation again.

Related topics:

- Report, see 3.3

4.9 Change Patient Information

You can open the Change Patient Information Dialog Box by choosing the menu TOOLS/CHANGE PATIENT INFO. Here you see the current values of each field, i.e.

patient name, comment and date, or empty fields if no value is entered yet. Choose [OK] to save the new values to the data file or [CANCEL] to keep the old ones.

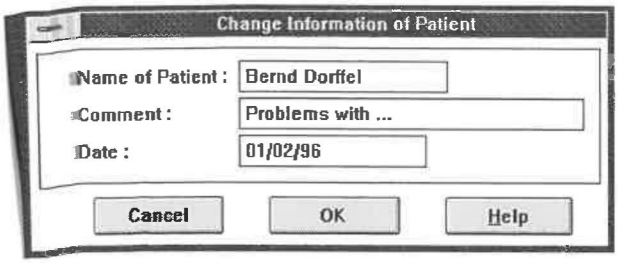

Figure 4.3: Change Patient Information Dialog Box

4.10 Preferences

You can change some options with the Preferences Dialog Box. You get to it through the menu TOOLS/PREFERENCES (ALT+T/P). In the dialog you can say what values should be shown if you move the cursor within a display. Simply mark the appropriate tick box. Furthermore you can fix the number of decimal points you want to see on the screen (display) and in the report. If you enter a value that is out of range it will be rejected and the highest/lowest possible value will be used instead.

To save these values for later sessions click *[SAVE]*. To use them in the current session choose [OK] and [CANCEL] to discard the changes.

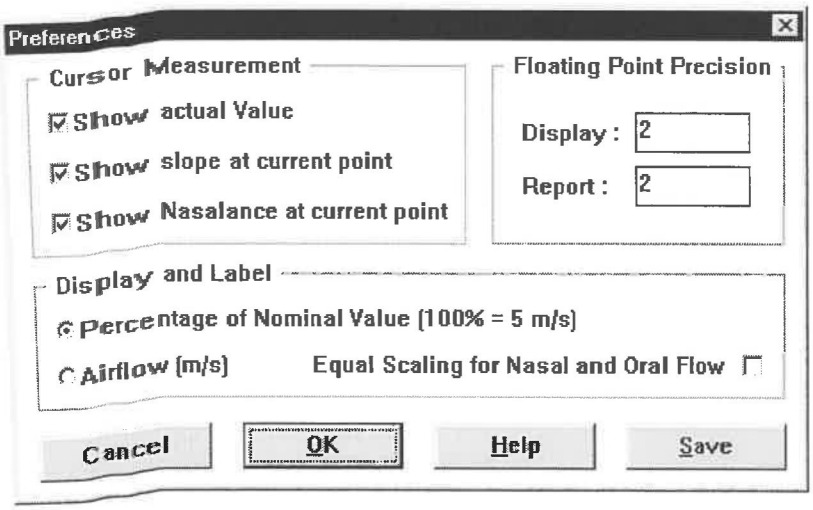

Figure 4.4: Preferences Dialog Box

4.11 Commands for Reports

What reports are is described in section 3.3. Here is a list of all available function which can be performed with reports. These are found under the menu FILE.

Open Report : When you choose this menu a File Open Dialog Box appears. See section 4.3 for a description of the dialog. You can either choose an existing file or enter the name for a new one. If the file exists the report is loaded into

memory, if not a new report is started. If the old report is not saved yet you are asked if you want to do so.

Save Report : The report is saved in a file with the current name.

Save Report As : You can choose the name under which the report should be saved. This name is used for the report until you choose another via SAVE REPORT AS or OPEN REPORT.

To show the report choose TOOLS/REPORT (ALT+T/R).

Related topics:

- Report, see 3.3
- Printing, see 4.12

4.12 Printing

To open the Printing Dialog Box choose FILE/PRINT (ALT+F/P). You can choose if you want to print the diagrams and/or the report. The diagrams are printed as you see them on the screen. You can change the visible area with the cropping operation. The report is printed as a normal text file as you can see it in the editor window. In the list box on the left side all available printers are listed. To change the options for a printer click on [OPTIONS] after you have highlighted the printer you want. Now you can choose [OK] to start the printing or [CANCEL] to exit the dialog without printing.

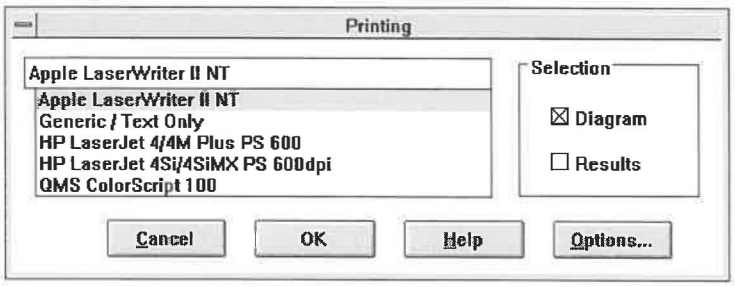

Figure 4.5: Printing Dialog Box

4.13 Window Menu

This is the same as in other MDI[3] applications, like word processors or spread sheet editors, apart from the 'TILE' command. This is not useful because the patient windows have a certain minimum size. Hence it is not possible to divide the main window into equally sized patient windows. Here is a short summary of the functions.

Cascade: Cascades the patient windows, i.e. arranges them overlapping each other so that the actual window is on top and the title bars of the other windows are still visible.

[3] MDI - Multi Document Interface, i.e. you can have several opened documents (files) at one time.

Arrange Icons: All iconized patient windows are arranged at the bottom of the main window.

Close All: All patient windows are closed. If anything is not saved yet you will be asked what to do.

Save State: The position of all the patient windows is saved.

Restore State: A previously saved state is restored and all the patient windows are opened at their former positions.

File Names: If you want to go to a patient window that is covered by other windows you can click at the appropriate menu item to view this window.

The commands Save State and Restore State are useful if you have to stop working with NASE and want to continue later at the same point.